

**Response**

Applicant: Darrel R. Bloomquist et al.

Serial No.: 10/080,847

Filed: Feb. 2, 2002

Docket No.: 10013884-1

Title: IN-PLANE TOROIDAL MEMORY CELL WITH VERTICALLY STEPPED CONDUCTOR

**REMARKS**

This Response replies to the Non-Final Office Action mailed December 3, 2003, in which claims 1-16 were rejected. Claims 17-20 have been withdrawn from consideration as being drawn to a non-elected invention. With this Response, no claims have been amended. Claims 1-20 remain pending in the application and are presented for reconsideration and allowance.

**Claim Rejections under 35 U.S.C. § 112**

Claims 1-16 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 1 and 9, the Examiner finds the limitation “a toroid-like memory cell” to be unclear and confusing, and requests the Applicants explain and provide more detail for this limitation.

Claims 2-8 and 10-16 are rejected because of their dependency on claims 1 and 9, respectively.

The term “toroid-like” is used in the application to describe a memory cell that is generally shaped like a toroid (i.e., ring-shaped). The term “toroid-like” is further intended to convey that the shape of the memory cell, while generally a toroid shape, is not limited to the strictest mathematical definition of a toroid. For example, within mathematics a toroid is defined as a surface of revolution obtained by rotating a closed plane curve about an axis parallel to the plane which does not intersect the curve. As can be seen by examining the Figures of the application, the “closed plane curve” used to define the shape of the memory cell may be rectangular in shape (see, for example, the cross-sectional views of Figures 2 and 3). In the context of the present application, a rectangle is considered to be a closed plane curve, although it may not strictly satisfy the mathematical definition of a “curve” due to the discontinuities in the mathematical function defining the rectangle. (The discontinuities in the function defining the rectangle occur at the corners of the rectangle).

For the reasons provided above, Applicants respectfully submit that the term “toroid-like” as used in the application does particularly point out and distinctly claim the subject

**Response**

Applicant: Darrel R. Bloomquist et al.

Serial No.: 10/080,847

Filed: Feb. 2, 2002

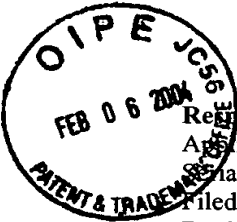
Docket No.: 10013884-1

Title: IN-PLANE TOROIDAL MEMORY CELL WITH VERTICALLY STEPPED CONDUCTOR

matter which applicant regards as the invention. Accordingly, withdrawal of the rejection of claims 1-16 under 35 U.S.C. §112, second paragraph, is respectfully requested.

**Allowable Subject Matter**

In light of the above, Applicant believes independent claims 1 and 9 and the claims depending therefrom, are in condition for allowance. Allowance of these claims is respectfully requested.



Response  
Applicant: Darrel R. Bloomquist et al.  
Serial No.: 10/080,847  
Filed: Feb. 2, 2002  
Docket No.: 10013884-1  
Title: IN-PLANE TOROIDAL MEMORY CELL WITH VERTICALLY STEPPED CONDUCTOR


**CONCLUSION**

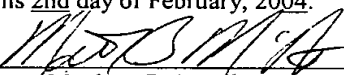
Any inquiry regarding this Amendment and Response should be directed to either Matthew B. McNutt at Telephone No. (512) 231-0531, Facsimile No. (512) 231-0540, or Philip S. Lyren at Telephone No. (281) 514-8235, Facsimile No. (281) 514-8332. In addition, all correspondence should continue to be directed to the following address:

**Hewlett-Packard Company**  
Intellectual Property Administration  
P.O. Box 272400  
Fort Collins, Colorado 80527-2400

Respectfully submitted,  
Darrel R. Bloomquist et al.,  
By their attorneys,  
DICKE, BILLIG & CZAJA, PLLC  
Fifth Street Towers, Suite 2250  
100 South Fifth Street  
Minneapolis, MN 55402  
Telephone: (612) 573-2000  
Facsimile: (612) 573-2005

Date: FEB 2, 2004  
MBM:dmd

  
Matthew B. McNutt  
Reg. No. 39,766

**CERTIFICATE UNDER 37 C.F.R. 1.8:** The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 2nd day of February, 2004.  
By   
Name: Matthew B. McNutt